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PLASMA ENDOTHELIN-1 INDEPENDENTLY PREDICTS 180-DAY MORTALITY IN ACUTE HEART FAILURE: AN ASCEND-HF SUB-STUDY

Moderated Poster Contributions
Heart Failure and Cardiomyopathies Moderated Poster Theater, Poster Hall B1
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Background: Endothelin-1 (ET-1) is an endogenous vasoconstrictor implicated in pulmonary and systemic hypertension as well as ventricular dysfunction, through effects on vascular smooth muscle, neurohormonal vascular regulation and cardiomyocytes.

Methods: We measured baseline ET-1 level (Singulex) in acute decompensated heart failure (ADHF) and 180-day mortality, using a cohort of 872 patients from the ASCEND-HF trial (randomized to nesiritide vs placebo).

Results: Median ET-1 was 7.6 pg/mL (IQR 5.9-10) at baseline, 6.3 pg/mL (IQR 4.9-8.1) at 48-72 hours, and 5.9 pg/mL (IQR 4.7-7.9) at 30 days. At 180 days, 102 patients had died. Elevated baseline ET-1 was associated with increased 180-day mortality risk (Figure, log-transformed ET-1: HR 3.29, 95% CI 2.08-5.22, p<0.0001). Multivariable adjustments for age, log-transformed BUN, sodium, baseline hypotension and baseline dyspnea at rest also showed statistical significance (log-transformed ET-1: HR 2.74, 95% CI 1.68-4.45, p<0.0001). When log-transformed baseline NTproBNP was included as an additional covariate, ET-1 remained independently associated with 180-day mortality (log-transformed ET-1: HR 1.98, 95% CI 1.18-3.32, p=0.009). Baseline and 30-day ET-1 levels were similar between nesiritide and placebo groups (p>0.05).

Conclusion: Baseline ET-1 independently predicts 180-day mortality in ADHF. ET-1 may serve as a novel biomarker of mortality in ADHF independent of NT-proBNP.